

Masonry

- 1. Concrete masonry units for load bearing walls shall have a minimum compressive strength of f'm = 1500 psi. a. Hollow units: ASTM C90 Grade N, normal weight Type 1 (moisture controlled) b. Solid units: ASTM C145 Grade N, Type 1 (moisture controlled)
- 2. Concrete masonry units shall be laid with type M or S mortar.
- 3. Grout for reinforced masonry: ASTM C476 (2000 psi)
- a. Horizontal joints: standard dur-o-wall or equivalent truss or tri-rod reinforcement at 16"o.c. unless noted b. Vertical and horizontal reinforcement: ASTM A615, Grade 60
- 5. Construction of all concrete masonry shall conform to the latest edition of aci-530.
- 6. Grout solid all cells containing reinforcing and all cells below grade.
- 7. Control joints: spacing shall not exceed 30'-0" or 3 times the wall height whichever is lesser, unless noted
- 8. Grout all beam and joist pockets solid after installation of beams and joists. 9. Minimum lap of reinforcing steel shall be 50 bar diameters for typical reinforcing and 50 bar diameters for all jamb
- bars shown on wall elevations or 2'-0" minimum.

10. Maximum height of grout pour shall be 4'-0".

- 11. Provide 1/4" clearance from inside face of block masonry cells and minimum of one bar diameter, but not less than 3/4" clear distance between parallel bars.
- 12. All vertical reinforcing steel shall be positioned and held in place by means of wire spacers.

Metal Decking

- 1. Provide design, fabrication, and erection of metal deck conforming to the Steel Deck Institute's "Code of Recommended Standard Practice and Basic Design Specifications". 2. Form roof deck from steel sheets conforming to ASTM A611 or A653 or higher specifications with minimum
- yield strength of 33 ksi. 3. Attach sheets to steel support members as indicated and in accordance with the manufacturer's instructions for installation. When deck is scheduled to be exposed, de-slag, clean and touched up welds with a zinc-rich
- 4. Lap roof ends minimum of 2 inches when fastening deck to support members provide welding materials installation procedures to prevent burning of holes in deck.
- 5. Metal deck fabricator to furnish shop drawings for structural engineer's review prior to fabrication. Shop drawings shall include welding procedure, side lap connections, testing programs for welding, coating material
- 6. Roof deck shall have the following minimum section properties. a. Section properties (per foot of width).
- Type = 1.5B: 16 gauge: I = .373 in^4; Sp = .408 in^3; Sn = .411 in^3 22 gauge: I = .169 in^4; Sp = .186 in^3; Sn = .192 in^3 20 gauge: I = .212 in^4; Sp = .234 in^3; Sn = .247 in^3
- 7. Floor form decking shall have the following minimum section properties.
- a. Section properties (per foot of width). 22 gauge: $lp = 0.324 in^4$; $ln = 0.321 in^4$; $Sp = 0.263 in^3$; $Sn = 0.266 in^3$

Reinforcing

- 1. Reinforcing shall be detailed and placed in conformance with ACI Detailing Manual.
- 2. Reinforcing bars shall conform to the requirements of ASTM A615 Grade 60 except all reinforcing in concrete moment frames and shear walls and all welded reinforcement shall conform to ASTM A706 Grade 60.
- 3. Welded wire fabric shall conform to ASTM A185.
- 4. Minimum lap of welded wire fabric shall be 6" or one full mesh + 2", whichever is greater.
- 5. Dowels between footings and walls shall be the grade, size and spacing or number as the vertical reinforcing,
- 6. Reinforcing steel in all concrete walls and footings shall be continuous around corners.

iii. Beams, columns: ties and primary reinforcing......1-1/2"

7. Provide (2) #5 extra reinforcing bars around all side of openings in concrete, unless noted otherwise on the plans. Extend bars 2'-0" beyond each edge of opening.

Minimum clear coverage of concrete over reinforcement shall be:	
a. Concrete cast against and permanently exposed to earth	3"
b. Concrete exposed to earth or weather:	
i. No. 6 through no. 18 bar	2"
ii. No. 5 bar, w31 or d31 wire or smaller	1-1/2"
c. Concrete not exposed to weather or in contact with ground:	
i. Slabs walls and joists no. 14 & no. 18	1-1/2"
ii. Slabs walls and joists no. 11 & smaller	

Concrete

- 1. All phases of work pertaining to the concrete construction shall conform to the "Building Code Requirements for Structural Concrete" (ACI 318), latest edition with modifications as noted in the drawings or specifications.
- 2. Concrete mixes shall be designed by a qualified testing laboratory and approved by the structural engineer.
- 3. All exposed corners or edges of columns, piers, walls, etc., shall be formed with a 3/4" chamfer unless noted otherwise on
- 4. All reinforcing bars, anchor bolts and other concrete inserts shall be well secured in position prior to placing concrete. 5. Provide sleeves for plumbing and electrical openings in concrete before placing concrete. Do not cut any reinforcing that may conflict. Coring is not permitted except as shown. Notify the structural engineer in advance of conditions not shown on
- 6. Conduit or pipe size (o.d.) shall not exceed 30% of the slab thickness and shall be placed between the top and bottom reinforcing unless specifically detailed otherwise. Concentrations of conduits or pipes shall be avoided except where detailed
- 7. Curing compounds on concrete that is to receive special finish shall be approved by the manufacturer before use.
- 8. Roughen surface of horizontal or nearly horizontal construction joints so that the aggregate shall be exposed uniformly, leaving no laitance, loosed particles or damaged concrete. 9. Locate joints not indicated to least impair strength and appearance of the structure. Locate horizontal joints in concrete only
- where they normally occur or where indicated. Locate vertical joints in middle third of spans of slabs, beams, or girders unless a beam intersects a girder at middle location, in which case offset joints in girders twice the width of the beam. 10. Once formwork has been removed from concrete retaining walls, brace walls thoroughly before placing soil against wall
- and keep bracing in place for a minimum of 7 days after earthwork is complete.

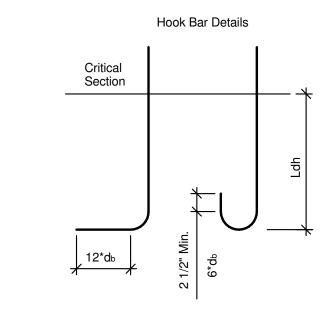
Use (Location)	28 Day Strength	Aggregate Size (Max.)	Cement/CY (Min.)	W/C ratio (Max.)	Slump (Max.)	Air Entrainment
Slab-on-grade (Interior)	f'c=3,000 psi	1"	480#	.62	4-1/2"	None
Exposed Concrete	f'c=4,000 psi	1"	560#	.54	4-1/2"	4%-6%
Footings	f'c=3,000 psi	1"	480#	.62	4-1/2"	None

Specialty Engineers

- 1. All precast elements and connections shall be designed by an engineer licensed by the State of Tennessee.
- 2. All new pier (deep) foundations shall be designed by an engineer licensed by the State of Tennessee
- 3. Pier (deep) foundations shall be constructed by a contractor with a minimum of 5 years experience installing similar pier (deep) foundations.

4. Contractor shall submit pier (deep) foundations data and proposed sequence of construction prior to beginning

REINFORCING EMBEDMENT / DEVELOPMENT LEN							
		f'c = 300	00 PSI	f'c = 40	00 PSI	f'c = 50	00 PSI
	Bar Size	Ld	Ldh	Ld	Ldh	Ld	Ldh
	#3	16 1/2"	8 1/2"	14 1/2"	8"	13"	7"
	#4	22"	11"	19"	10"	17"	9"
	#5	28"	14"	24"	12"	22"	11"
	#6	33"	17"	29"	15"	26"	13"
	#7	48"	20"	42"	17"	38"	15"
	#8	55"	22"	48"	19"	43"	17"
	#9	62"	25"	54"	22"	48"	20"
	#10	70"	28"	61"	25"	54"	22"
	#11	78"	31"	67"	27"	60"	24"



db = Bar Diameter

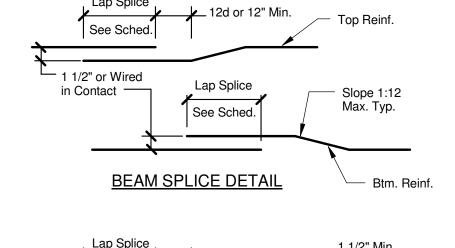
Fy = 60 ksi

- 2. Ld = Straight Bar Development Length 3. Ldh = Development Length w/ Standard Hook.
- REINFORCING LAP SPLICE LENGTH SCHEDULE Bar Size | f'c = 3000 PSI | f'c = 4000 PSI | f'c = 5000 PSI

#3	22"	19"	17"	
#4	29"	25"	22"	
#5	36"	31"	28"	
#6	43"	38"	34"	
#7	63"	54"	49"	
#8	72"	62"	56"	
#9	81"	70"	63"	
#10	91"	79"	71"	
#11	101"	87"	78"	
				•

Fy = 60 ksi

- 2. Splice lengths are for normal weight concrete. 3. All splices shall be staggered as shown. If more than 50% of
- the reinforcing is lap spliced within the required lap splice length, the lap splice length shall be increased by 33%. 4. Lap lengths specifically detailed in drawings shall govern in
- lieu of schedule. 5. Smaller bar required lap length shall be used when splicing with a larger bar.



6" Max.

1. Inspection is not required for installation of foundations except at locations

5. Inspection for maintenance of specified curing temperature and techniques shall be

7. Manufacturer's mill certificates shall certify products meet or exceed the specified

8. Placement of reinforcing steel for size, quantity, spacing and coverage shall be

10. Inspect bolts to be installed in concrete prior to and during placement of concrete

11. Qualified field testing technicians shall perform tests on fresh concrete at the job

be taken not less than once a day, nor less than once for each 150 cubic yards of

from the same sample of concrete and tested at 28 days or at the test age designated

concrete, nor less than once for each 5000 s.f. of surface are for slabs or walls.

A. Samples for strength tests of each class of concrete placed each day shall

B. A strength test shall be the average of the strengths of two cylinders made

C. Concrete shall be tested for slump, air content and temperature at the time

6. Submit certified copies of mill test report of reinforcement materials analysis.

2. Periodic inspection shall be required at 25% of the shear wall locations.

3. Inspector shall verify use of the required design mix periodically.

4. Placement of concrete for proper technique shall be inspected.

9. Welding of reinforcing steel shall be inspected periodically.

SLAB SPLICE DETAIL

designated as shear walls.

periodically performed.

performed periodically.

for determination of f'c.

of making specimens for strength tests.

where designated on drawings.

CONCRETE INSPECTIONS AND TESTING

Quality Assurance (IBC 2006)

SPECIAL INSPECTIONS (PER SECTION 1704 OF IBC 2006) 1. The owner shall employ one or more special inspectors to provide inspections during

- 2. Inspections required shall mean special inspections as defined and required by the
- 3. The special inspector shall be a qualified person who shall demonstrate
- competence, to the satisfaction of the building official, for inspection of the particular type of construction or operation requiring special inspection. 4. Continuous inspections, where required means the full-time observation of the work
- by an approved special inspector who is present in the area of work being performed. 5. Periodic inspection shall be as indicated in the appropriate section.

REPORT REQUIREMENT 1. Special inspectors shall keep records of inspections.

- 2. The special inspector shall furnish inspection reports to the building official and to the registered design professional.
- 3. Reports shall indicate that work was inspected and was done in conformance to approved construction documents.
- 4. Discrepancies shall be brought to the immediate attention of the contractor for correction. If the discrepancies are not corrected, the discrepancies shall be brought to the attention of the building official and to the registered design
- professional prior to the completion of that phase of the work. 5. A final report of inspections documenting required special inspections and correction of any discrepancies noted in the inspections shall be submitted to the building official and to the registered design professional.
- STRUCTURAL STEEL INSPECTIONS AND TESTING 1. Inspections designated as periodic shall have a minimum of 5% of bolting or welding
- 2. Fillet welds shall be visually inspected per AWS d1.1 section 6 as follows:
- A. Multi-pass fillet welds shall be continuously inspected. B. Single pass fillet welds > 5/16" shall be continuously inspected. C. Single pass fillet welds < or = 5/16" shall be periodically inspected.
- 3. Complete and partial penetration groove welds shall be continuously inspected per AWS D1.1 section 6. All complete penetration groove welds shall be tested.
- 4. Inspectors shall review welder certificates for verifying welders employed on the work have AWS qualification within previous 12 months.
- 5. Mill test reports shall be submitted indicating structural strength and destructive and non-destructive test analysis.
- 6. Manufacturer's mill certificates shall certify products meet or exceed the specified requirements.
- 7. High strength bolting inspection: A. While the work is in progress, the special inspector shall determine that the requirements for bolts, nuts, washers, and paint; bolted parts; and installation and
- tightening in such standards are met. B. For bolts requiring pre-tensioning, the special inspector shall observe the preinstallation testing and calibration procedures when such procedures are required by the installation method; determine that all plies of connected materials have been drawn together and properly snugged; and monitor the installation of bolts to verify that the selected procedure for installation is properly used to tighten bolts. C. For joints required to be tightened only to the snug tight condition, the special
- inspector need only verify that the connected materials have been drawn together properly D. Installation of bearing-type high strength bolts shall be periodically inspected. E. Installation of slip-critical high strength bolts shall be continuously inspected.

application of joint details at each connection.

8. Steel framed joint details shall be periodically inspected for compliance with approved construction documents to confirm bracing and stiffening; member size and locations;

- MASONRY INSPECTIONS AND TESTING
- 1. Inspections designated as periodic shall be inspected prior to each grouting
- 2. As masonry construction begins, the inspector shall verify: A. Proportions of site prepared mortar. B. Construction of mortar joints.
- C. Location of reinforcement and connectors.
- 3. The inspector shall periodically verify: A. Type, size, and location of anchors, including other details of
- anchorage of masonry to structural members, frames or other construction. B. Specified size, grade and type of reinforcement. C. Protection of masonry during cold weather (below 40 degrees F) or hot weather (above 90 degrees F).
- 4. Prior to grouting the inspector shall verify: A. Grout space is clean. B. Placement of reinforcement and connectors.

code and construction document provisions.

ARS

JTS

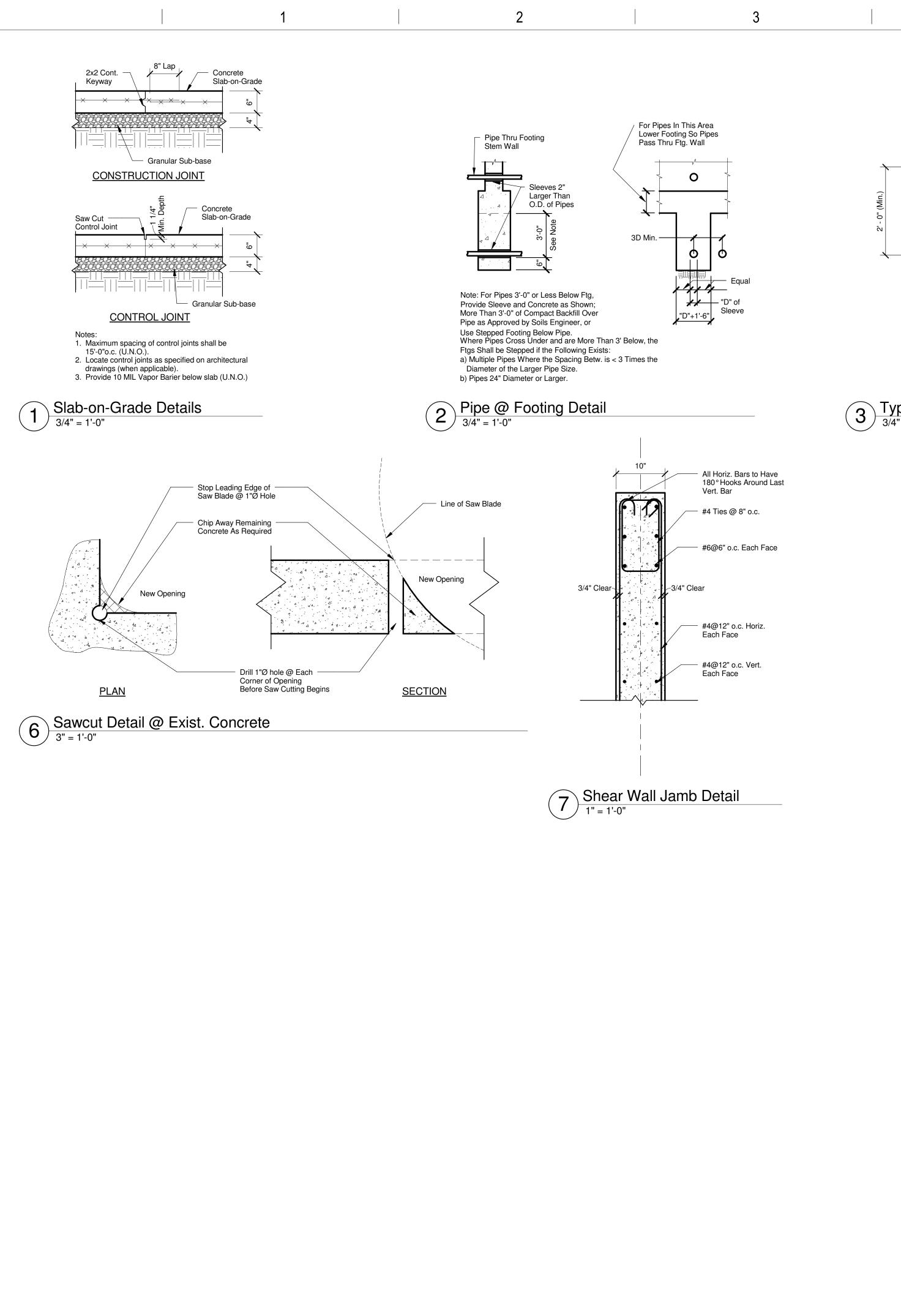
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Jan. 27, 2014

- 5. Grout placement shall be continuously inspected to ensure compliance with
- 6. Preparation of required grout specimens, mortar specimens and/or prisms shall be continuously observed.
- 7. The compressive strength of masonry, f'm, shall be verified prior to construction either by the unit strength method, per IBC 2015.2.2.1 or the prism test method, per IBC 2105.2.2.2.

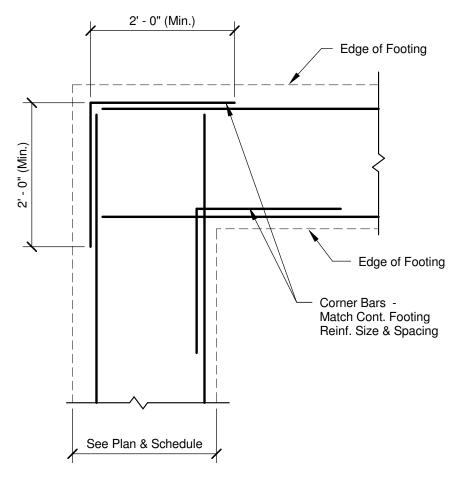
	DRAWING LIST		
Sheet No:	Sheet Name		
S-100	General Notes		
S-101	Typical Details		
S-102	Typical Details		
S-103	Concrete Pier Layouts		
S-104	Column Base Plate Layouts		
S-200	Ground Floor		
S-200a	Deep Foundation Plan		
S-201	Level 1 Framing Plan		
S-202	Level 2 Framing Plan		
S-301	Foundation Details		
S-302	Foundation Conditions		
S-303	Level L1 Sections		
S-304	Entrance Canopy Sections		
S-305	Existing Transfer Girder Modifications		
S-401	Deep Foundation Enlarged Plans		

ARCHITECT/ENGINEERS: **General Notes** 614-318 VA BUILDING 1A ENTRANCE Allen&Hoshall BUILDING NUMBEF **brgas**architects **EXPANSION** 119 S. Main Street Suite 200 SCALE: 3/4" = 1'-0" since 1915 Memphis, Tennessee 38103 DRAWING NUMBER APPROVED PROJECT DIRECTOR: t 901.260.9600 **VAMC**, Memphis, Tennessee S-100 f 901.521.1337 w brg3s.com

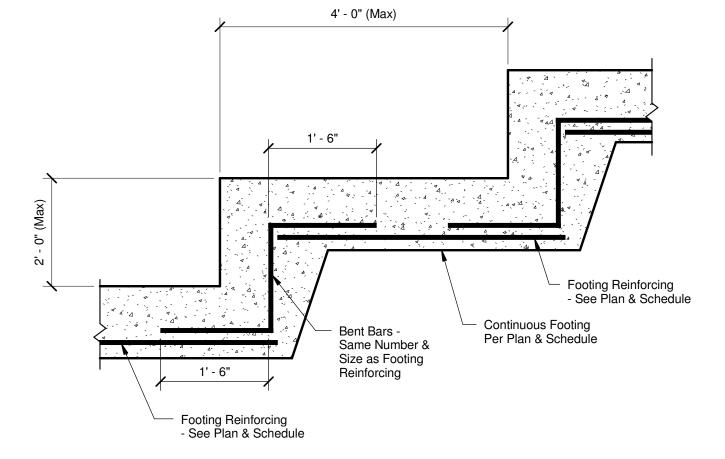


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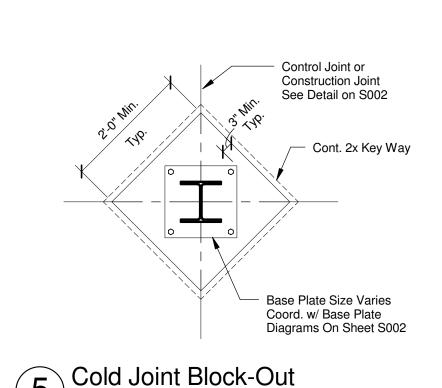
one eigth inch = one foot
0 4 8 1











(5)	1/2" = 1'-0"

	WALL SCHEDULE				
Type	Width	Horizontal Reinforcing	Vertical Reinforcing	Material	Remarks
CW1	0' - 10"	See 7/S-101	See 7/S-101	f'c = 3000psi	
CW2	0' - 8"	#4 @ 12"o.c.	#4 @ 12"o.c.	f'c = 3000psi	
CW3	1' - 0"	#4 @ 16"o.c. Each Face	#5 @ 12"o.c. Each Face	f'c = 3000psi	

FOOTING SCHEDULE						
Туре	Length	Width	Depth	Reinforcing Longitudinal	Reinforcing Transverse	Remarks
F132A	11' - 0"	11' - 0"	1' - 6"	(10) #6 x 10'-6"	(10) #6 x 10'-6"	Top & Btm
F228 / 84	19' - 0"	7' - 0"	2' - 0"	(7) #5 x 18'-6"	(19) #5 x 6'-6"	Top & Btm





